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Particularities of Tuberculosis in HIV Positive Patients

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ABSTRACT

Tuberculosis and HIV co-infection is a major public health problem worldwide. Tuberculosis in HIV-infected patients presents clinical and paraclinical atypicalities making the diagnosis of this pathology difficult. We report in this manuscript the observation of a patient with multifocal tuberculosis revealing HIV infection.

Introduction

Tuberculosis (TB) is the most common opportunistic infection during acquired immunodeficiency syndrome (AIDS) worldwide. HIV itself is a factor in the current resurgence of TB. TB/HIV co-infection is a major public health problem worldwide.

In co-infected patients, tuberculosis presents a certain number of particularities, namely: the frequency of extra-pulmonary and multifocal forms due to severe immunosuppression; an atypical clinical picture and the high frequency of negative sputum bacilloscopies. All this makes the diagnosis of tuberculosis difficult to establish.

We report here the observation of a patient with multifocal tuberculosis revealing HIV infection.

Case report

The patient was 58 years old, originally from Nigeria, living in Morocco for 20 years, and had unprotected sexual intercourse.

The patient was admitted to the department to explore a liquid diarrhea evolving for 4 months associated with an alteration of the general state and a weight loss of 10kg with anorexia and night fever.

The physical examination revealed an apyretic patient with a BMI of 19cm/m2. The abdominal examination did not reveal any hepatosplenomegaly or ascites.

The biological work-up showed microcytic hypochromic anemia at 9g/dl, a leucocyte count of 3560 with lymphopenia at 200, an inflammatory syndrome with a CRP of 219 and a serum ferritin level of 4000mg/l.

The liver and malabsorption work-up were unremarkable.

The infectious disease work-up revealed HIV positive serology, an expert gene in the sputum and a quantiferon test which came back positive.

The thoracic-abdominal-pelvic CT scan showed a focus of left posterolateral bronchiolitis with an infectious appearance and a circumferential pericardial effusion 18 mm thick. Abdominally, a magma of peri-pancreatic and inter-aortic-caval adenopathies with a necrotic center, the most voluminous measuring 7*4cm.

The spleen was the site of multiple lesions, one of which was superiorly polar and peripherally enhanced after injection of contrast with a major axis of 8mm.

The diagnosis of multifocal tuberculosis was made in view of the positivity of the Gene expert, the quantiferon and the diffuse radiological involvement suggestive of multifocal tuberculosis.

The patient was put on anti-tuberculosis treatment based on quadritherapy (Rifampicin, Isoniazid, Ethambutol and Pyrazinamide) and then referred to the Internal Medicine Department for antiretroviral treatment.

Discussion

Tuberculosis is a contagious infectious disease caused by a mycobacterium of the tuberculosis complex (mainly mycobacterium tuberculosis hominis). It is still a major public health problem worldwide. Tuberculosis and HIV form a deadly combination, each accelerating the progression of the other. The risk of tuberculosis infection developing into active tuberculosis is 18 times higher in HIV-infected people than in those who are not infected. [1]

The most common form of TB in HIV-infected patients is pulmonary TB, which is exclusive in 55-60% of cases. However, extra-pulmonary tuberculosis, isolated or associated with pulmonary tuberculosis, and multifocal or disseminated tuberculosis, which means the involvement of two extra-pulmonary sites, with or without pulmonary involvement, are more frequently observed in HIV-positive patients [2].

Fever and weight loss are the most common general signs in these patients, especially in those with a CD4 count below 200/mm^3[3]

Biologically, hematological disturbances are more frequent in subjects with a CD4 count of less than 200/mm3. The various hematological manifestations are not specific for the diagnosis of tuberculosis. They may be microcytic hypochromic anemia of the inflammatory type, moderate

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hyperleukocytosis with lymphocytosis and, more rarely, leukopenia or thrombocytopenia[4]

The tuberculin TST is of limited value in the diagnosis of tuberculosis in HIV-infected patients, as it may be falsely negative due to viral post-infectious anergy and immune depression. The TST is only of interest when the CD4 lymphocyte count is above 500 per cubic millimeter. The threshold of positivity in a patient infected with HIV is 5mm. The same applies to the direct examination of sputum, which is not very sensitive because it is only positive when the bacillary concentration is at least 10,000/ml. [5]

In HIV-positive patients, the radiological presentation is more atypical the more advanced the disease, the classic cavernous tuberculosis of the top is uncommon, and sometimes the chest X-ray is normal despite the presence of koch's bacilli in the sputum [6]. The absence of pulmonary lesions is thought to be related to an inability to develop granulomas, which is directly related to the degree of HIV immunosuppression at the time of the tuberculosis infection [7].

The treatment of tuberculosis in the HIV-infected patient is not different from the treatment of an HIV-negative person and is based on a combined treatment (two months of an "intensive" quadritherapy combining Rifampicin, Isoniazid, Ethambutol and Pyrazinamide, and four months of dual therapy combining Rifampicin and Isoniazid) for a total duration of six to nine months depending on the location of the tuberculosis. It should be prescribed between 2 and 8 weeks before starting antiretroviral treatment (ARV) [8].

In patients whose CD4 count is above 50/µl, treatment can be deferred until the end of the initial phase of anti-tuberculosis treatment. In patients with a CD4 count of less than 50/µl and pulmonary tuberculosis, initiation of antiretroviral therapy should be very early. The optimal duration of initiation of ARVs depends on the degree of immunosuppression and also on the location of the tuberculosis [9].

Conclusion

HIV-associated tuberculosis has atypical clinical and paraclinical manifestations, of variable severity depending on the degree of immunosuppression, and it is important to know how to request an HIV test in the face of any tuberculosis.

A better understanding of the risk factors, diagnosis and mortality of TB in HIV-infected patients will improve their quality of life by facilitating diagnosis and optimising prognosis.

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